



MathConceptition

2019

P6

Question Booklet

問題簿

Name:

姓名：

Reg. No.:

登記編號：

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Time: 1 hour

Calculators are NOT permitted.

Instructions:

1. DO NOT OPEN THIS QUESTION BOOKLET UNTIL YOU ARE TOLD TO DO SO.
2. Write your name and registration number on the cover of this question booklet.
3. Please use a pencil and write your answers neatly ONLY on the answer sheet provided. DO NOT write or draw in the circle next to each answer box. No mark will be given if you failed to follow this instruction.
4. If the information printed on your answer sheet is not correct, please inform the invigilator immediately.
5. Rough-work sheets provided will be collected at the end of the contest but they will not be marked.
6. Diagrams in this question booklet are not necessarily drawn to scale.

限時：1小時

不允許使用計算機。

考生須知：

1. 未宣布開始前，切勿翻閱此問題簿。
2. 請在此問題簿封面的適當位置寫上你的姓名及登記編號。
3. 所有答案必須寫在答題紙內，並須用鉛筆作答。請勿填寫或畫花題號後方的圓圈，否則該題答案將會作廢。
4. 請核對答題紙上列出的資料是否與你相符。如有問題，請舉手。
5. 比賽完結時監考員會收回桌上的草稿紙，但草稿紙上所書寫的任何文字或圖表將不獲評閱。
6. 此問題簿的附圖不一定依比例繪成。

- 1) $196 \div 14 = ?$ [1%]
- 2) $4.45 + 5.5 = ?$ [1%]
- 3) $60.2 \times 5 = ?$ [1%]
- 4) $198 \div 9.9 = ?$ [1%]
- 5) $\frac{3}{4} \div 100\% = ?$ [1%]
- 6) $222.2 - 8.88 = ?$ [1%]
- 7) $13.72 \div 0.28 = ?$ [1%]
- 8) $3.72 \times 2.5 = ?$ [1%]
- 9) $37 \div 9 \times 63 = ?$ [1%]
- 10) $9.999 - 8.888 \div 1.1 = ?$ [1%]

11) Evaluate $1 + \frac{1}{3} - \frac{1}{4}$. (Give your answer in fraction.) [1%]

計算 $1 + \frac{1}{3} - \frac{1}{4}$ 。（答案以分數表示。）

12) Evaluate $0.5 + \frac{1}{4} - 25\%$. (Give your answer in fraction.) [1%]

計算 $0.5 + \frac{1}{4} - 25\%$ 。（答案以分數表示。）

13) Evaluate $\frac{1}{2} - \frac{1}{4} - \frac{1}{8} - \frac{1}{16} - \frac{1}{64}$. (Give your answer in fraction.) [1%]

計算 $\frac{1}{2} - \frac{1}{4} - \frac{1}{8} - \frac{1}{16} - \frac{1}{64}$ 。（答案以分數表示。）

- 14) Evaluate $\frac{6}{7} \div \frac{3}{28} \div \frac{5}{18} \div \frac{7}{15}$. (Give your answer in fraction.) [1%]

計算 $\frac{6}{7} \div \frac{3}{28} \div \frac{5}{18} \div \frac{7}{15}$ 。(答案以分數表示。)

- 15) Evaluate $60\% \div \left(\frac{1}{12} + \frac{3}{8} \right)$. (Give your answer in fraction.) [1%]

計算 $60\% \div \left(\frac{1}{12} + \frac{3}{8} \right)$ 。(答案以分數表示。)

- 16) During an art lesson, 10 students used an average of 8 origami papers and 6 other students used an average of 6 origami papers. How many origami papers did each of the 16 students use on average? [2.0%]

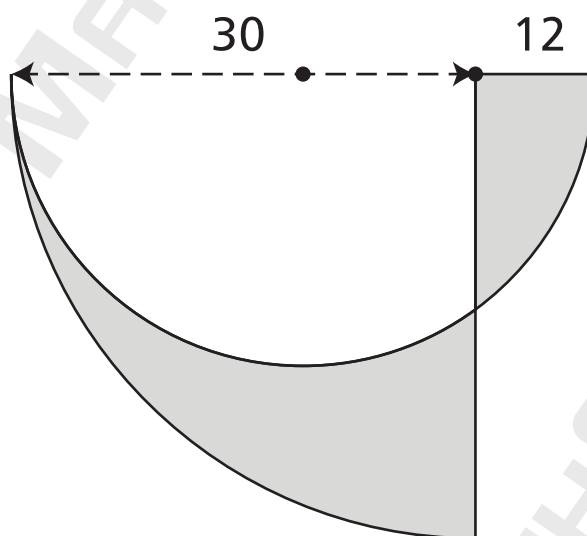
上勞作堂時，有 10 位同學平均每人用了手工紙 8 張，另外有 6 位同學平均每人用了 6 張。16 位同學平均每人用了手工紙多少張？

- 17) After drinking 20% of a bottle of milk, there is 320 millilitres left. How many millilitres of milk was there in the bottle originally? [2.1%]

一瓶牛奶喝去 20% 後，還剩下 320 毫升，該瓶牛奶原有多少毫升？

- 18) Find the perimeter of the shaded parts. (Express the answer in terms of π .) [2.2%]

求圖形著色部分的周界。(答案以 π 表示。)



- 19) There was 6.9 litres of juice. Lily drank 2.5 litres of it [2.3%]
and then Sally drank half of the remaining juice. By
what percentage was the amount drank by Sally less
than the amount drank by Lily?

有果汁 6.9 公升，小麗喝了 2.5 公升後，琪琪又喝了餘
下果汁的一半。問琪琪比小麗少喝了百分之幾？

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- 20) There are a tea pot and 3 tea cups in a tea set. 4 tea [2.4%]
sets cost \$6500. If the cost of a tea pot is 2 times the
cost of a tea cup, find the cost of a tea cup.

一套茶具具有 1 個茶壺和 3 隻茶杯，買 4 套茶具需付
\$6500。如果一個茶壺的售價是一隻茶杯的 2 倍，一隻
茶杯的售價是多少元？

- 21) When a cubic metal and 1.369 L of water are put into a cubic tank with a length of 15 cm so that the metal is totally immersed in water, the depth of water is 12 cm. Find the length of the cubic metal in cm. [2.5%]

把一個正方體金屬和 1.369 升的水放進一個邊長是 15 厘米的正方體水族箱，使金屬完全浸沒在水中。若水位高 12 厘米，問正方體金屬的邊長是多少厘米？

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- 22) $\frac{3}{8}$ of the students in a class are girls. If there are 8 fewer girls than boys, how many students are there in the class? [2.6%]

班上女生人數佔全班的 $\frac{3}{8}$ ，如果女生比男生少 8 人，班上共有學生多少名？

- 23) There is some water in a tank which is 10 cm long, 12 cm wide, and 16 cm high. When a toy car of volume 1600 cm^3 is totally immersed in the water, 400 mL of water will overflow. What is the original height of the water level in cm? [2.7%]

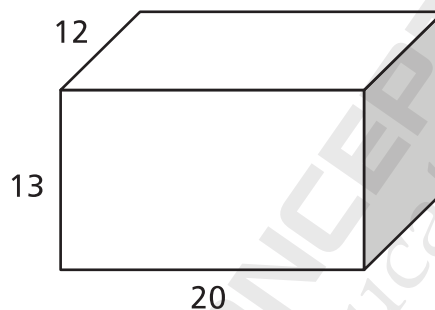
一個水族箱，長 10 cm，闊 12 cm，高 16 cm。水族箱內原有一些水，把一架 1600 cm^3 的玩具車完全浸沒在水中後，溢出了水 400 mL。問水位原本高多少厘米？

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- 24) A fish tank is 0.4 m long and 35 cm wide. The depth of water in the tank is $\frac{2}{5}$ m. If the water in the tank is poured into glasses of 550 mL, at least how many glasses are needed to hold all the water? [2.8%]

一個魚缸長 0.4 米，闊 35 厘米，水位高 $\frac{2}{5}$ 米。若把魚缸裏的水倒入容量為 550 毫升的杯中，要盛載全部水最少需用杯多少隻？

- 25) Cut the largest possible cube from the cuboid below, then cut another largest possible cube from the rest of the solid. What is the volume of the remaining part? [2.9%]

在下方的長方體上切去一個最大的正方體，再在餘下的立體上切去另一個最大的正方體，最後餘下立體的體積是多少？



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- 26) The total price of an apple and 2 mangoes is \$40.80. [3.0%]
Given that an apple is \$9.90 cheaper than a mango, what is the total price of 2 apples and 3 mangoes?

買一個蘋果和兩個芒果需付 40.8 元。已知一個蘋果比一個芒果便宜 9.9 元，問兩個蘋果和三個芒果售多少元？

- 27) Winnie and Wendy walked towards the same direction [3.1%]
with the speeds of 1.7 m/s and 2.5 m/s respectively.
Winnie was in front of Wendy at the beginning. 15
minutes later, Wendy caught up with Winnie. What
was the distance between them at the beginning in
kilometers?

小晴原本在小儀前面，兩人同時朝同一方向而行，她們步行的平均速率分別是 1.7 m/s 和 2.5 m/s。15 分鐘後，小儀追上小晴，問兩人原本相距多少公里？

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- 28) There are 600 cakes of 4 different flavors. 37% of [3.2%]
them are chocolate cakes and 13% of them are
mixed fruits cakes. If the difference between the
percentages of mango cakes and blueberry cakes is
5%, what is the least possible number of mango
cakes?

四款蛋糕合共有 600 件，巧克力蛋糕佔 37%，雜果蛋糕佔 13%，芒果蛋糕和藍莓蛋糕所佔的百分比相差 5%。問芒果蛋糕最少有多少件？

29) Solve the equation for x . (Express the answer in decimal.) [3.3%]

求 x 的值。 (答案以小數表示。)

$$\left(75\% - \frac{5}{12}\right)x = 4.6$$

30) Simplify $\frac{1711}{2419}$. [3.4%]

將 $\frac{1711}{2419}$ 約至最簡。

31) There are 40 questions in a test paper. 3 marks are given for every correct answer while 1 mark is deducted for every wrong answer. No marks are given or deducted for no answer. Peter got 59 marks. At least how many questions did Peter answer correctly? [4.0%]

一份試卷有 40 條問題，答對得 3 分，答錯扣 1 分，沒答得 0 分。小明得 59 分，他最少答對了幾題？

32) $1 + 5 + 9 + 13 + \dots + 241 + 245 = ?$

[4.1%]

33) If $1 + \frac{1}{1 + \frac{2}{a - \frac{3}{4}}} = \frac{20}{19}$, find the value of a .

[4.2%]

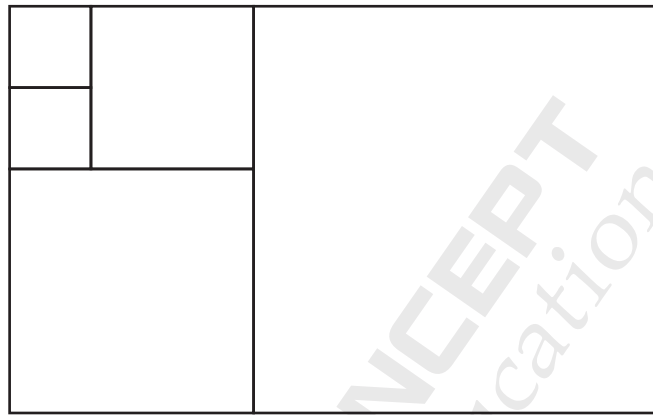
已知 $1 + \frac{1}{1 + \frac{2}{a - \frac{3}{4}}} = \frac{20}{19}$ ，求 a 的值。

34) Find the units digit of $2^{2019} + 0^{2019} + 1^{2019} + 9^{2019}$. [4.3%]

$2^{2019} + 0^{2019} + 1^{2019} + 9^{2019}$ 的個位數是多少？

- 35) In the figure, a rectangle is divided into 5 squares. If the largest square has an area of 365, find the area of the rectangle. [4.4%]

圖中，一個長方形被分成 5 個正方形。若當中最大的一個正方形的面積是 365，求長方形的面積。



- 36) $\frac{1}{2019 \times 2016} + \frac{1}{2016 \times 2013} + \frac{1}{2013 \times 2010} + \dots + \frac{1}{9 \times 6} + \frac{1}{6 \times 3} = ?$ [4.5%]

- 37) The sum of the square of an odd number and the square of a prime number is 1853. What is the sum of the cube of that odd number and the cube of that prime number? [4.6%]

一個奇數的平方與一個質數的平方之和是 1853，該奇數的立方與該質數的立方之和是多少？

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- 38) At 7 o'clock and how many minutes will the hour hand and the minute hand overlap? (Give your answer in fraction.) [4.7%]

7 時幾分時針與分針重疊？（答案以分數表示。）

39) A, B, C and D need to finish a project. [4.8%]

If B and D work together, it will take $3\frac{3}{5}$ days to complete.

If A, B and C work together, it will take $2\frac{2}{3}$ days to complete.

If A, C and D work together, it will take $3\frac{3}{23}$ days to complete.

How many days does it take to finish the project if A and C work together? (Give your answer in fraction.)

甲、乙、丙和丁四人做一項工作。

若乙和丁兩人工作，需要 $3\frac{3}{5}$ 天完成。

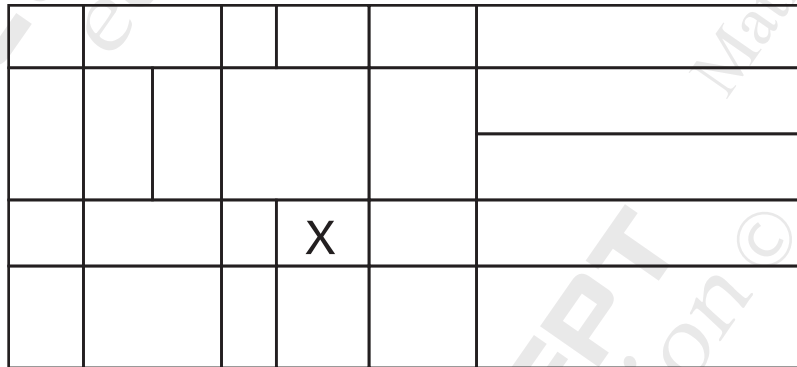
若甲、乙和丙三人工作，需要 $2\frac{2}{3}$ 天完成。

若甲、丙和丁三人工作，需要 $3\frac{3}{23}$ 天完成。

若甲和丙兩人工作，需要多少天才能完成？（答案以分數表示。）

- 40) How many rectangles in the picture below include "X"? [4.9%]
"X"?

下圖中共有多少個長方形內有「X」？



End of paper
全卷完



REG NO			P6
NAME			
GROUP			
SEAT			

ANSWER SHEET

ANSWER		ANSWER		ANSWER		ANSWER	
1 14	<input type="radio"/>	11 $1\frac{1}{12}$	<input type="radio"/>	21 11	<input type="radio"/>	31 20	<input type="radio"/>
2 9.95	<input type="radio"/>	12 $\frac{1}{2}$	<input type="radio"/>	22 32	<input type="radio"/>	32 7626	<input type="radio"/>
3 301	<input type="radio"/>	13 $\frac{3}{64}$	<input type="radio"/>	23 6	<input type="radio"/>	33 $\frac{31}{36}$	<input type="radio"/>
4 20	<input type="radio"/>	14 $61\frac{5}{7}$	<input type="radio"/>	24 102	<input type="radio"/>	34 8	<input type="radio"/>
5 $\frac{3}{4}$	<input type="radio"/>	15 $1\frac{17}{55}$	<input type="radio"/>	25 880	<input type="radio"/>	35 584	<input type="radio"/>
6 213.32	<input type="radio"/>	16 7.25	<input type="radio"/>	26 64.7	<input type="radio"/>	36 $\frac{224}{2019}$	<input type="radio"/>
7 49	<input type="radio"/>	17 400	<input type="radio"/>	27 0.72	<input type="radio"/>	37 79515	<input type="radio"/>
8 9.3	<input type="radio"/>	18 $36\pi+42$ Or $6(6\pi+7)$	<input type="radio"/>	28 135	<input type="radio"/>	38 $38\frac{2}{11}$	<input type="radio"/>
9 259	<input type="radio"/>	19 12%	<input type="radio"/>	29 13.8	<input type="radio"/>	39 $4\frac{4}{5}$	<input type="radio"/>
10 1.919	<input type="radio"/>	20 325	<input type="radio"/>	30 $\frac{29}{41}$	<input type="radio"/>	40 60	<input type="radio"/>